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THE OPPORTUNITY FOR FORESTRY IN SOUTHERN AGRICULTURE[1]

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By E. L. Demmon.

Opportunities for forestry in southern agriculture have become even greater since they were last discussed before this group of southern agricultural workers a year ago. Since that time American agriculture has entered on a change greater than any it experienced in the preceding century, the change from the old laissez faire system to nationally planned economy. Through this change, embodied in provisions of the National Industrial Recovery Act and the Agricultural Adjustment Act, the southern farmer's opportunities for profit through management of his woodlands have been distinctly enlarged.

Farm woodlands rank high as an element in the agricutlural economy of the South. In 1930 the 11 Southern States, from Virginia to Texas[2], contained 57,866,000 acres of farm woodlands, a total that constituted 30 percent of all their forest land and that came within 5,000,000 acres of equaling their total area in cultivation. According to estimates by the United States Forest Service, southern farm woodlands contained in that year more than 48 billion board feet of merchantable timber, or 39 percent of the total volume of saw timber in the South. Census reports classify nearly one-fourth of all the land in farms in the South as woodland. In 1930 the South's cash income from farm forest products reached a total of $82,436,000, which was the fourth largest income from any single farm crop of the region. As a money crop on southern farms, forest products were outranked only by cotton (lint and seed), tobacco, and potatoes (all kinds). They brought in a larger income than all truck crops combined. In four of the Southern States - Alabama, Arkansas, Mississippi, and Virginia - income from forest products ranked second, and in four others - Georgia, North Caroline, South Carolina, and Tennessee - it ranked third.

Southern farm woodlands constitute 11.7 percent of the area of commercial forest land in the United States as a whole. In contrast with forest lands elsewhere in the United States, they have an outstanding advantage in that the average rate of tree growth in the South exceeds that in any other region. The annual volume growth on forest lands of the South amounts to 4.8 billion cubic feet, which is 54 percent of that on all the forest lands of the United States.

In the past, southern farmers have done little to increase the income from their woodlands through improved management. Much remains to be done before all southern farm woodlands are adequately proteced against

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[2] Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Arkansas, Texas, and Oklahoma.

fire, over-grazing, insect and disease epidemics, and abnormal erosion, and before their utilization approaches the ideal. The advent of the small mill has been the chief cause of over-cutting in the South, as elsewhere in the eastern United States. In many cases farmers have sacrificed stumpage under pressure of financial difficulties or simply because a small sawmill happened to be temporarily located in the vicinity. Often farmers owning small mills have converted all their merchantable timber into lumber, ties, posts, or other products for the sake of immediate cash income, when through selective cutting and careful milling they could have obtained an equal income without the sacrifice of adequate growing stock.

In the naval stores belt, farmers have often sacrificed tree growth in order to work immature trees for naval stores (turpentine and rosin). This causes the early death or deterioration of second-growth trees which otherwise would develop normally and, as they increase in size, become more profitable to turpentine. Here also the desire to realize on their timber resources has led to injury of the forest property.

The result of over-exploitation of farm woodlands is very evident in the great acreage of cut-over, burned-over woodland in the South that has reverted to public ownership for non-payment of taxes. Through over-cutting and lack of management, followed by depletion resulting from uncontrolled fires, this land has often been reduced to a waste on which the owner could no longer afford to pay taxes. Its reversion has increased the taxes on land remaining in private ownership, tending to force it into the same condition. Although forest growth in the South is potentially rapid, it cannot compete with uncontrolled fires, destructive cutting, and confiscatory taxes.

So much for the past; what of the future? The recently signed Code of Fair Competition for the Lumber Industry sets up several kinds of restrictions for sawmill operators and other manufacturers of forest products. It sets a definite periodic maximum of production and specific minimum prices at which manufactured forest products can be sold. Under the Code the small mill owner, as well as the owner of a large mill, is held to a specific allotment of finished or semi-finished lumber products. Obviously, he will limit his cut or purchase of saw logs to correspond with his production allotment; on the other hand, the fact that a minimum price has been established for his product will enable him to pay more for stumpage and logs than he has been paying.

As yet, the farm woodlands do not come directly under the provisions of the Lumber Code. The Lumber Code Authority has recommended that the Code be extended to include them and it may be expected that this extension will soon take place. Although the individual farmer or other small woodland owner is not yet specifically protected by the Code against exploitation either as to the price he receives for his stumpage or through over-cutting of his timber, he is now in a better position to "shop around" among sawmill owners and because of the Code obtain a better price for his stumpage or logs. In doing this he can avail himself of the help of agencies such as the State and Extension Foresters and the County Agricultural Agents. He can

also better protect himself in the marketing of his timber products through the establishment of marketing associations.

Under the terms of a marketing agreement to which the Secretary of Agriculture recently gave his tentative approval, the marketing of naval stores would be regulated by the Agricutlural Adjustment Administration through a control committee of producers, this committee acting as the authority for the industry. One section of the marketing agreement now under consideration would provide that unturpentined trees less than 9 inches in breast-height diameter should not be worked except under special permission, and that not more than one face should be worked on trees less than 14 inches in breast-height diameter. This is a very desirable provision; turpentining of small trees is detrimental to the forest and thus works against the owner's profit and against public interest. Regulation would be by marketing quotas similar to those under the Lumber Code.

This forestry provision is intended to help stabilize the prices of naval stores through establishing a balance of production and consumption. The effect on the farmer who works his woods for naval stores would be to increase the price he obtains for his gum, and hence the profits on his operation.

So far as the future market for wood products is concerned, owners of farm woodland areas in the South are justified in expecting that their opportunities will not diminish. As has already been mentioned, the farm woodlands of the South contain about one-fourth of the total volume of saw timber in the region. In 1932, the South provided 37 percent of the Nation's total output of lumber. It produced 52 percent of the Nation's hardwood lumber. As a potential source of cordwood-size timber suited to pulp and paper manufacture, the South stands pre-eminent in the Nation; it is estimated that 42 percent of all the potential raw material available for wood-pulp manufacture in the Nation is in the South, a total of 767,762,000 cords. Much of this is on farms. This timber is growing at a more rapid rate than that of any other forest region of the United States. The production of railroad ties, poles, staves, and other wood products also offers a wide opportunity to the owner of the farm forest, an opportunity which, in fact, many farmers have misused to such an extent as to cause their properties to deteriorate.

Aside from cash income through sale of forest products, the production of fuelwood, posts, poles, lumber, and similar products for use on the farm represents an important part of the total farm income. For the South as a whole, the latest available data indicate that 42 percent of farm forest products, by value, is use directly on the farms. In Union Parish, Louisiana, investigations by the Southern Forest Experiment Station in conjunction with the Louisiana Agricultural Experiment Station showed that in 1930 the value of forest products cut and used on 119 farms averaged $33 per farm, or $.48 per acre of woodland. The cut of products thus used was concentrated on a small percentage of the total woodland area, so that for the land actually cut over the value was much greater. If these products had to be paid for out of the farmers' pocketbooks instead of coming out of their woodlands, the burden would be considerable.

As a concrete example of the tree growth that is taking place on farms in one part of the South, let me cite some information obtained by the Southern Forest Experiment Station in its study of the financial aspects of growing timber. The data apply to Union Parish, Louisiana, as of 1929. In this parish more than 40 percent of the land is in farm woodland. Studies of individual farms showed that very few farmers were practicing good forestry. It was found, however, that in a farm woodland representing the parish average, the well-stocked pine stands were growing at an annual rate of more than 500 board feet per acre and that the average annual growth for all the farm woodlands in the parish was more than 200 board feet per acre. The possible annual income from sale of stumpage and pulpwood, at the prevailing prices, averaged $2.47 per acre for well-stocked stands and $.71 per acre for the whole woodland. The cost of taxes, fire protection, and forest management per acre per year was $.31 for the well-stocked areas and $.25 for the whole woodland. Thus, the indicated net profit per acre per year was $2.16 for the well-stocked woodland and $.48 for the whole woodland. These figures present a strong argument for careful protection and management, since on well-stocked woodlands the net profit per acre was more than four times as great as on average woodlands.

It behooves the owner of a farm woodland, whether he be farmer or urban resident, to protect his property carefully, manage it wisely, and cut it conservatively. To obtain protection against fire is in general a relatively simple matter. Federal allotments are made available for this purpose under the provisions of the Clarke-McNary Law and the State Forest Services cooperate with owners or groups of owners of forest land in protecting their forest properties from fire. With Federal and State cooperation, owners of southern woodland areas can obtain protection of their forest properties from fire at an annual cost to them of about 2 or 3 cents per acre. Owners of small tracts in localities where it is impossible to establish protection units can at least plow firebreaks around their woods, remove snags and down timber, and observe care in the use of fire.

In the longleaf pine belt, woodlands must be protected against hogs if longleaf reproduction is desired. This can be done without excessive cost by building and maintaining good stock fences. An abundance of pasture is available in the South without over-grazing of farm woodlands.

A third form of protection that is today receiving belated attention is protection against erosion. In seven Southern States, from North Carolina to Texas, 55 camps of the Civilian Conservation Corps, with a total of 11,000 men, are at work this winter on a program of controlling soil erosion. This work is a part of a comprehensive program for controlling rapid run-off of water and resulting soil erosion, at the headwaters of streams. The method of stopping or healing gullies is largely to revegetate them by planting trees, vines, or grasses. To do this in the larger gullies, low temporary check dams of brush, poles, or wire are built, the banks are then reduced to an angle of repose, top soil is put into the gully, and soil-binding trees, vines, or grasses are planted. These improvements, in addition to their direct effect in checking erosion, will serve as demonstrations to guide the farmers in their efforts to heal gullies on their farms. Areas on which abnormal erosion has been checked can be put to work growing crops of black

locust or other timber. A necessary concomitant of this gully-healing work is correction of agricultural practices, such as using improved methods of cultivation, including terracing and contour plowing, lack of which has been an important factor in undue run-off from slopes.

In the field of forest utilization, the farmer's job is not difficult. Instead of clear-cutting his merchantable timber, the woodland owner should practice selective cutting and thus get a continuous income. For his pulpwood and posts he can remove trees that are defective for lumber purposes and that are interfering with the development of other trees. Such culling increases the growth and value of the remaining stand. He can thin out young stands for firewood, cross ties, or pulpwood, and by watching the market can arrange to make these thinnings at the times when the cut material will bring the best prices. Even if he desires to sell or cut his timber for lumber, he should not slash off everything on the ground. He will get more for his logs if he sells by grade rather than by gross volume. Ordinarily, selective cutting costs nothing aside from the owner's time and its returns continue for many years. An owner of southen woodland can well afford to pay taxes on managed forest land that is highly productive and is returning a profit on the investment. He cannot afford to pay taxes on woodland that has been denuded beyond hope of repair during his lifetime. Trees in the woods are like capital in the bank; their new growth corresponds to the interest.

Likewise, in the field of turpentining improved utilization practices are easily attained. There is an increasing tendency on the part of farmers owning small tracts of longleaf and slash pine timber to do their own turpentining. This arrangement is more satisfactory than leasing timber to naval stores operators, because it enables the owners to follow conservative practices, such as low chipping and narrow faces, which operators are sometimes reluctant to adopt. Tests conducted by the Southern Forest Experiment Station have demonstrated that cutting streaks 1/2-inch high in longleaf and slighly less high in slash pine results in producing practically as much gum per streak as cutting higher streaks and permits working a face two to four years extra, with an accompanying increase in returns to the timber owner. Particularly in crowded stands of slash pine, experiments have shown that increased liability to insect and fungus attack results from deep chipping and from making deep cuts to insert tins. Owners who chip their own trees can lessen the danger of this type of damage by using a more shallow streak and by tacking tins on the faces. In order to improve their timber, farmer woodland owners can practice thinning by chipping to death certain trees, the remvoal of which will benefit the trees remaining in the stand. Occasionally, droughts make it necessary that turpentined trees be rested; this can be arranged to better advantage if the owner is handling the chipping than if he has leased out the chipping rights.

In regions where no pulpwood market exists, production of naval stores provides the earliest possible returns from young longleaf and slash pine timber. This early income is a matter of considerable interest to farmers, since it enables them to pay carrying costs such as taxes and fire-protection charges.

A recent publication, "Florida Naval Stores," by L. Wyman and C. H. Coulter, Florida Forest Service Bulletin No. 9, July 1933, contains a form of turpentine lease that is particularly valuable to turpentine farmers who are not in position to handle their own chipping work.

In all forestry activities in his woods, skilled help is readily available to the farmer. Practically every State in the South has an extension forester working, in cooperation with the State and Federal forestry agencies and through the county agricultural agents, to aid owners of forest lands in establishing sound woods practices. Through joint efforts, also, extension foresters and county agricultural agents are training 4-H Club members in forest practices and are establishing demonstration areas. The results of this cooperation are indicated by the fact that in 1932 farmers in 12 Southern States were assisted in woodland management on a total of 520,782 acres; 910 farmers planted trees on 13,800 acres; 4,431 farmers were assisted in some other phase of timber production; and 4,037 4-H Club members completed forestry projects.

Records of the Extension Service show, incidentally, that in 1932 each agricultural agent in the South, on the average, spent on all forestry projects only 0.6 of one percent, or the equivalnet of less than two full days per year, of his time. The maximum proportion of time devoted by county agents of any one state to forestry projects was 1.3 percent, the figure for Arkansas. In view of the proportion of the farm area occupied by woodland and the size of the farm income from forest products, it seems that the proportion of county agents' time devoted to forestry activities might justifiably be greatly increased.

State foresters and district foresters of State organizations also assist in advising farmers on their forest problems, and distribute trees for planting at cost. Printed matter on many phases of forest protection, management, and utilization is available through these various agencies.

The United States Forest Service, maintains, with headquarters at New Orleans, Louisiana, and Asheville, North Carolina, regional forest experiment stations for research on technical problems involved in forest protection, forest management, erosion control, reforestation, naval stores production, and forest economics. These stations' findings are made currently available to the forestry and agricultural agencies of the States.

All these agencies are working in the interest of the farm woodland owner. Final application of the methods they recommend is something that the farmer, himself, must carry out. The results will be more than worth the effort.